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INTERNATIONAL STANDARD

Flexible insulating sleeving –
Part 3: Specifications for individual types of sleeving – Sheet 281: Heat-shrinkable, polyolefin sleeving, semiconductive

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FLEXIBLE INSULATING SLEEVING –

Part 3: Specifications for individual types of sleeving – Sheet 281: Heat-shrinkable, polyolefin sleeving, semiconductive

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IEC 60684-3-281 has been prepared by IEC technical committee 15: Solid electrical insulating materials. It is an International Standard.

This second edition cancels and replaces the first edition published in 2010. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) change in volume resistivity requirement to a maximum;

b) change in method to measure resistivity.

The text of this International Standard is based on the following documents:

Draft	Report on voting
15/1044/FDIS	15/1059/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all the parts in the IEC 60684 series, under the general title *Flexible insulating sleeving*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

This document is one of a series of standards which deals with flexible insulating sleeving for electrical purposes.

The series consists of three parts:

IEC 60684-1: Definitions and general requirements

IEC 60684-2: Methods of test

IEC 60684-3: Specifications for individual types of sleeving

This document comprises one of the sheets of IEC 60683-3 as follows:

Sheet 281: Heat-shrinkable, polyolefin sleeving, semiconductive

This sleeving is normally supplied in the colour black.

Materials which conform to this specification meet established levels of performance. However, the selection of a material by a user for a specific application will be based on the actual requirements necessary for adequate performance in that application and not based on this specification alone.

This sleeving is designed to be used in MV cable accessories and as such electrical performance will be proven as part of the assembly. Examples of this are described in HD 629 and IEC 60502 (all parts).

FLEXIBLE INSULATING SLEEVING –

Part 3: Specifications for individual types of sleeving – Sheet 281: Heat-shrinkable, polyolefin sleeving, semiconductive

1 Scope

This part of IEC 60684 gives the requirements for two types of heat-shrinkable, polyolefin sleeving, semiconductive, with a nominal shrink ratio of 3:1.

This sleeving has been found suitable for use up to temperatures of 100 °C.

– Type A: Thin wall Internal diameter up to 195,0 mm typically
– Type B: Medium wall Internal diameter up to 120,0 mm typically

~~These sleevings are normally supplied in the colour black.~~

Since these types of sleevings cover a significantly large range of sizes and wall thicknesses, Annex A provides guidance on the range of sizes available. The actual size ~~shall~~ will be agreed between the user and the supplier.

~~Materials which conform to this specification meet established levels of performance. However, the selection of a material by a user for a specific application should be based on the actual requirements necessary for adequate performance in that application and not based on this specification alone.~~

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2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60296~~:2003~~, *Fluids for electrotechnical applications –~~ Unused Mineral insulating oils for transformers and switchgear~~ Mineral insulating oils for electrical equipment*

~~IEC 60502 (all parts), Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV)~~

IEC 60684-1~~:2003~~, *Flexible insulating sleeving – Part 1: Definitions and general requirements*

IEC 60684-2:~~1997~~2025, *Flexible insulating sleeving – Part 2: Methods of test*
~~Amendment 1 (2003)~~
~~Amendment 2 (2005)~~

IEC 60757~~:1983~~, *Code for designation of colours*

~~HD 629, *Test requirements on accessories for use on power cables of rated voltages from 3,6/6(7,2)kV up to 20,8/36 (42)kV – Part 1: Cables with extruded insulation*~~

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Flexible insulating sleeving – Part 3: Specifications for individual types of sleeving – Sheet 281: Heat-shrinkable, polyolefin sleeving, semiconductive

Gaines isolantes souples – Partie 3: Spécifications pour types particuliers de gaines – Feuille 281: Gaines thermorétractables en polyoléfine, semiconductrices

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FLEXIBLE INSULATING SLEEVING –

Part 3: Specifications for individual types of sleeving – Sheet 281: Heat-shrinkable, polyolefin sleeving, semiconductive

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IEC 60296, *Fluids for electrotechnical applications – Mineral insulating oils for electrical equipment*

IEC 60684-1, *Flexible insulating sleeving – Part 1: Definitions and general requirements*

IEC 60684-2:2025, *Flexible insulating sleeving – Part 2: Methods of test*

IEC 60757, *Code for designation of colours*

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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GAINES ISOLANTES SOUPLES –

Partie 3: Spécifications pour types particuliers de gaines – Feuille 281: Gaines thermorétractables en polyoléfine, semiconductrices

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L'IEC 60684-3-281 a été établie par le comité d'études 15 de l'IEC: Matériaux isolants électriques solides. Il s'agit d'une Norme internationale.

Cette deuxième édition annule et remplace la première édition parue en 2010. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) modification de l'exigence de résistivité transversale par une valeur maximale;

b) modification de la méthode de mesurage de la résistivité.

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
15/1044/FDIS	15/1059/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/publications.

Une liste de toutes les parties de la série IEC 60684, publiées sous le titre général *Gaines isolantes souples*, se trouve sur le site web de l'IEC.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous webstore.iec.ch dans les données relatives au document recherché. À cette date, le document sera

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- révisé.

INTRODUCTION

Le présent document fait partie d'une série de normes qui traitent des gaines isolantes souples à usages électriques.

Cette série est composée de trois parties:

IEC 60684-1: Définitions et exigences générales

IEC 60684-2: Méthodes d’essai

IEC 60684-3: Spécifications pour types particuliers de gaines

Le présent document contient l'une des feuilles qui composent l'IEC 60683-3 à savoir:

Feuille 281: Gaines thermorétractables en polyoléfine, semiconductrices

La couleur de ces gaines est normalement le noir.

Les matériaux conformes à la présente spécification satisfont à des niveaux établis de performance. Toutefois, l'utilisateur choisit le matériau destiné à une application spécifique en se fondant sur les exigences réelles nécessaires pour assurer des performances adéquates dans le cadre de l'application considérée et non sur la présente spécification seule.

Ces gaines sont conçues pour être utilisées dans des accessoires de câbles MT (moyenne tension) et, en conséquence, les performances électriques sont établies dans le cadre de l’assemblage concerné. De tels exemples sont décrits dans le HD 629 et l'IEC 60502 (toutes les parties).

GAINES ISOLANTES SOUPLES –

Partie 3: Spécifications pour types particuliers de gaines – Feuille 281: Gaines thermorétractables en polyoléfine, semiconductrices

1 Domaine d'application

La présente partie de l'IEC 60684 donne les exigences relatives à deux types de gaines thermorétractables, en polyoléfine, semiconductrices, dont le rapport de rétreint nominal est égal à 3:1.

Ces gaines se sont révélées être adaptées à une utilisation à des températures allant jusqu'à 100 °C.

– Type A: Paroi mince Diamètre intérieur type jusqu'à 195,0 mm
– Type B: Paroi moyenne Diamètre intérieur type jusqu'à 120,0 mm

Comme ces types de gaines couvrent une gamme très étendue de dimensions et d'épaisseurs de paroi, l'Annexe A fournit des recommandations sur la gamme des dimensions disponibles. Les dimensions réelles font l'objet d'un accord entre l'utilisateur et le fournisseur.

2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60296, *Fluides pour applications électrotechniques – Huiles minérales isolantes pour matériel électrique*

IEC 60684-1, *Gaines isolantes souples – Partie 1: Définitions et exigences générales*

IEC 60684-2:2025, *Gaines isolantes souples – Partie 2: Méthodes d'essai*

IEC 60757, *Code de désignation de couleurs*